TA2035

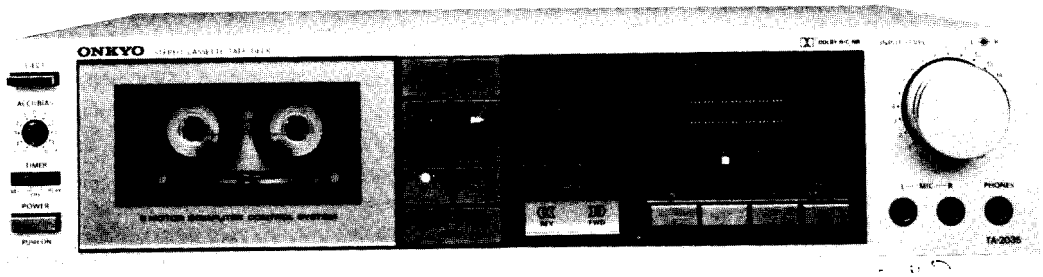
SERIAL NO. 3127

ONKYO® SERVICE MANUAL

STEREO CASSETTE

TAPE DECK

MODEL TA-2035



ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

D model

Track Format:	4-track, 2-channel stereo
Recording System:	AC bias
Erasing System:	AC erase
Tape Speed:	4.8cm/sec. (1-7/8 i.p.s.)
Wow & Flutter:	0.045% (WRMS)
Frequency Response:	20—15,000Hz (30—14,000Hz ± 3dB) (normal position tape) 20—17,000Hz (30—16,000Hz ± 3dB) (high position tape) 20—18,000Hz (30—17,000Hz ± 3dB) (metal position tape)
Signal-to-Noise Ratio:	60dB (Metal tape, Dolby NR Out) A noise reduction of 10dB above 5kHz and 5dB at 1kHz is possible with Dolby B NR. A noise reduction of 20dB at 5kHz is possible with Dolby C NR.
Input Jacks:	Microphone Jacks: 2 Minimum input level: 0.3mV/600Ω Input impedance: 5kΩ Line In Jacks: 2 Minimum input level:50mV Input impedance: 50kΩ
Output Jacks:	Line Out Jacks: 2 Standard output level: 500mV (0dB) Optimum load impedance: more than 50kΩ Headphone: 1 Optimum impedance: 8—200Ω
Motors:	DC servo motor: 2 DC motor: 2
Heads:	Rec/pb head: Hard Permalloy Erase head: Ferrite
Semiconductors:	71 transistors, 41 diodes, 8 ICs, 10 LEDs
Power Supply:	AC 120V/60Hz
Power Consumption:	20 watts
Dimensions:	418(W) x 100(H) x 270(D)mm (16-1/2" x 3-15/16" x 10-5/8")
Weight:	4.5kg. (9.9lbs.)

Specifications and external appearance are subject to change without prior notice due to product improvements.

Mechanism specifications

1) Tape speed:	4.8cm/sec. (3,000Hz ~ 3,060Hz) Use a standard test tape MTT-111 (3kHz) or equipment.
2) Wow and Flutter:	Less than 0.08% (WRMS)
3) Take-up torque:	35—55 gr-cm
4) F.F. torque:	70—140 gr-cm
5) Rewind torque:	70—140 gr-cm
6) Rewind time:	Less than 90sec. (Use a C-60 cassette tape)

G/W models

Track Format:	4-track, 2-channel stereo
Recording System:	AC bias
Erasing System:	AC erase
Tape Speed:	4.8cm/sec. (1-7/8 i.p.s.)
Wow & Flutter:	0.045% (WRMS)
Frequency Response:	20—15,000Hz (30—14,000Hz ± 3dB) (normal position tape) 20-17,000Hz (30—16,000Hz ± 3dB) (high position tape) 20—18,000Hz (30—17,000Hz ± 3dB) (metal position tape)
Signal-to-Noise Ratio:	60dB (Metal tape, Dolby NR Out) A noise reduction of 10dB above 5kHz and 5dB at 1kHz is possible with Dolby B NR. A noise reduction of 20dB at 5kHz is possible with Dolby C NR.
Input Jacks:	Microphone Jacks: 2 Minimum input level: 0.3mV/600Ω Input impedance: 5kΩ Line In Jacks: 2 Minimum input level: 50mV Input impedance: 50kΩ DIN In Jack: 1 Minimum input level: 0.1mV/1kΩ Input impedance: 2.7kΩ
Output Jacks:	Line Out Jacks: 2 Standard output level: 500mV (0dB) Optimum load impedance: more than 50kΩ DIN Out Jack: 1 Standard output level: 500mV (0dB) Optimum load impedance: over 50kΩ Headphone: 1 Optimum impedance: 8—200Ω
Motors:	DC servo motor: 2 DC motor: 2
Heads:	Rec/pb head: Hard Permalloy Erase head: Ferrite
Semiconductors:	73 transistors, 41 diodes, 8 ICs, 10 LEDs
Power Supply:	AC 120V/60Hz AC 220V/50Hz, 120V, 220V 50/60Hz or 240V/50Hz
Power Consumption:	20 watts
Dimensions:	418(W) x 100(H) x 270(D) mm (16-1/2" x 3-15/16" x 10-5/8")
Weight:	4.5kg. (9.9lbs.)

Specifications and external appearance are subject to change without prior notice due to product improvements.

SPECIAL MODE OPERATION

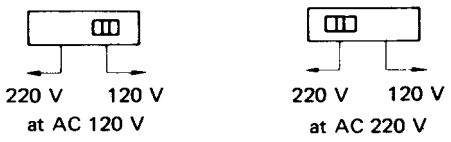
1. Using the AMSS Function

The AMSS (Automatic Music Search System) automatically locates the beginning of each song on a tape and plays the first 15 seconds (approximately) of each one. It is particularly useful to rapidly check the contents of a cassette. When AMSS FWD is pressed during normal tape playback the tape is rapidly wound to the beginning of the next song and, as the play indicator flashes on and off, the first 15 or 16 seconds of that song is played. Then the tape is rapidly wound to the beginning of the next song and, again, the first 15 or 16 seconds is played. This process is repeated until the PLAY button is depressed or the end of the tape is reached. When AMSS REV is pressed, the same process is performed in the reverse direction. If you want to hear the entire song, press the PLAY button to cancel the AMSS function and return to normal playback. The AMSS circuit operates by detection the blank sections between songs. If the space between songs is too short, the AMSS circuit may go on to the next blank space of sufficient length. In order to assure that the blank sections between songs on your cassettes are sufficiently long, you should use the auto space button to insert these spaces when making recordings.

Note: AMSS REV may not operate properly if there is a very quiet section followed by a very loud section in the 15 to 16 second long portion played at the beginning of one of the songs. If this occurs, press AMSS REV again to continue AMSS REV operation .

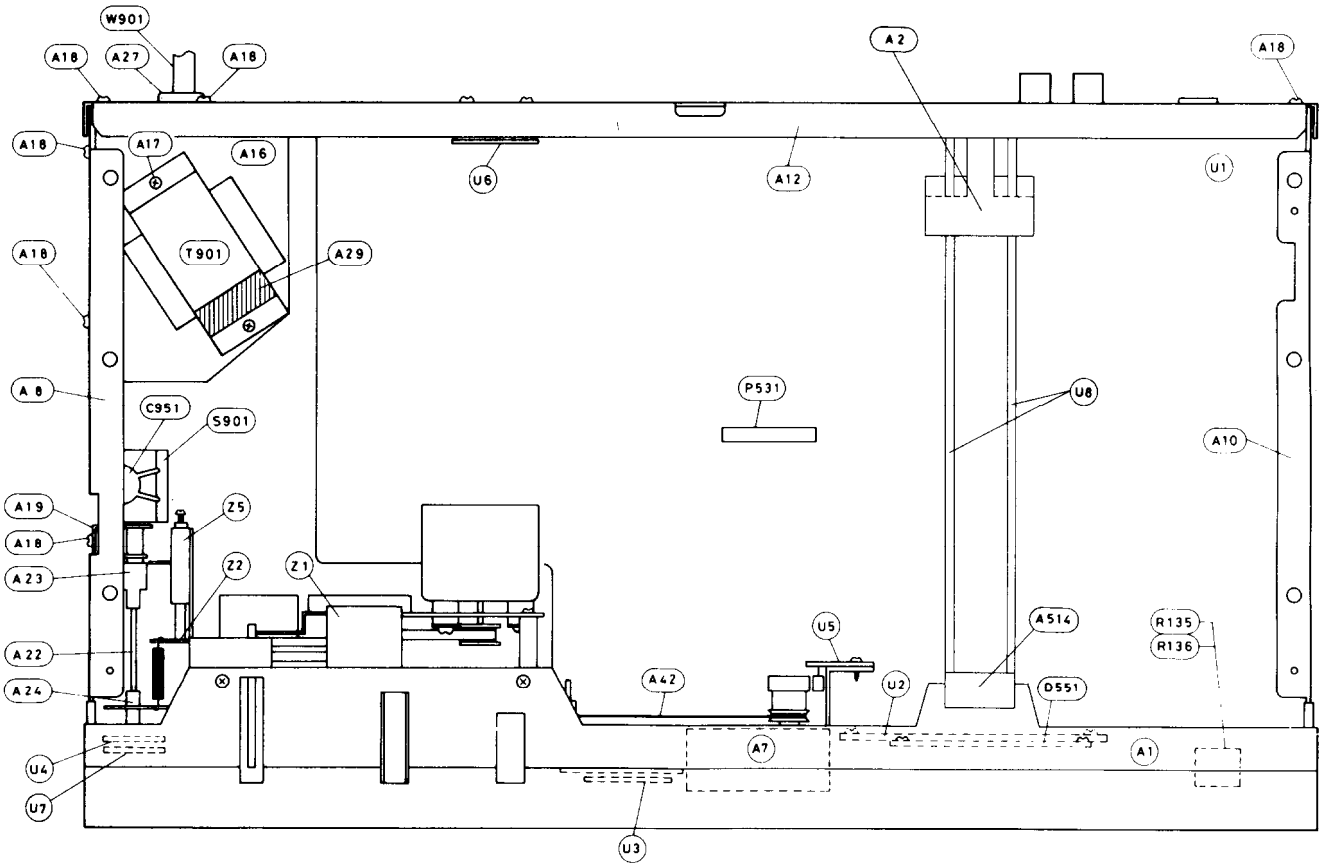
2. Voltage Selector (on Rear Panel)

W model is equipped with a voltage selector. If the unit you own has a voltage selector, be sure it is set to the proper voltage before the power is turned on. To change the selector to conform to the power supply in your area, insert the tip of a screwdriver in the groove of the switch and slide it all the way to the left or right.



Note: Units not equipped with a voltage selector can only be used in areas where the power supply agrees with the voltage specified on the rear panel.

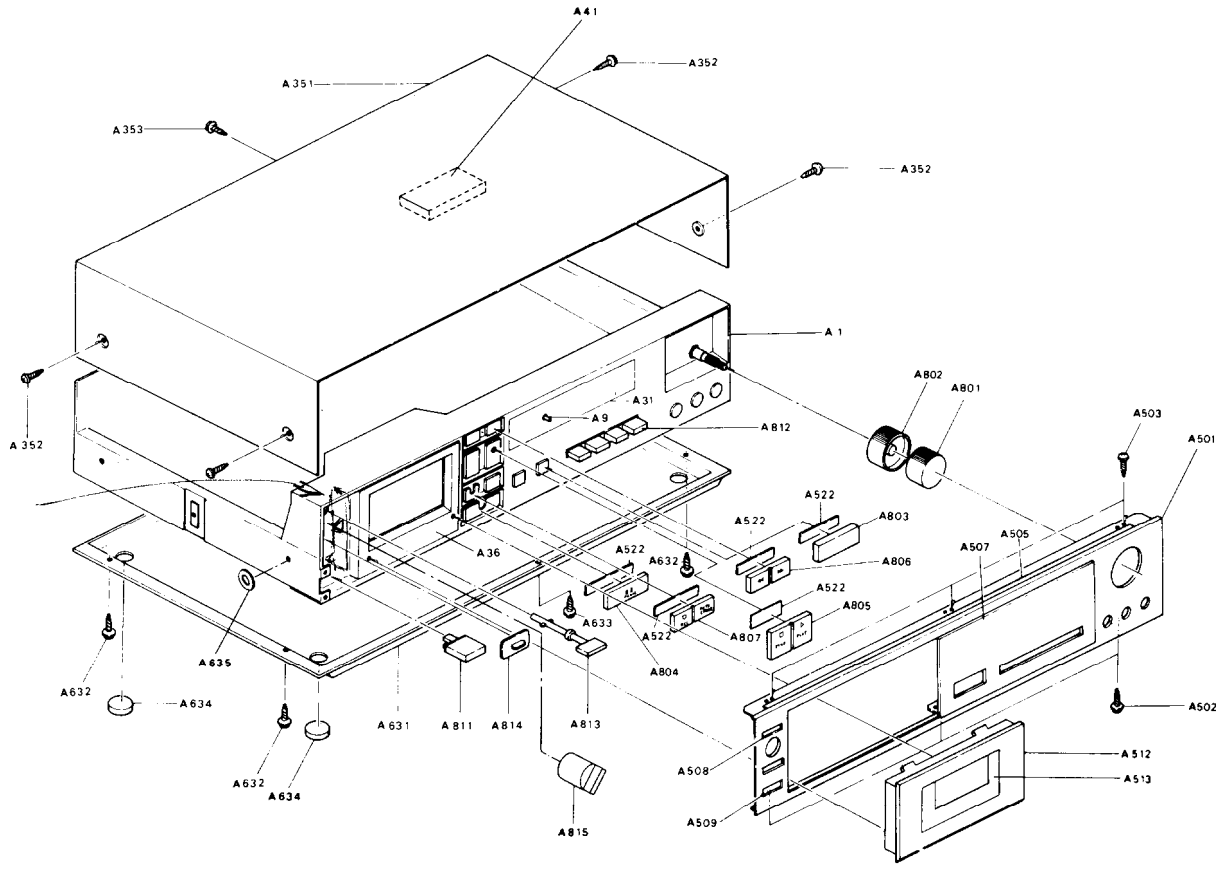
COMPONENT LOCATION



REF. NO.	PARTS NO.	DESCRIPTION
A1	27110170	Front bracket
A2	27130312	Bracket, pc board
A3	834130088	3TTS + 8B, Tap screw
A4	27130282	Bracket, pc board
A5	27270089	Spacer
A6	831130068	3TTW + 6B, Tap screw
A7	24601100	Counter
A8	27115120	Side bracket, Left
A9	28320387	Knob, counter
A10	27115096-1	Side bracket
A11	833130080	3TTP + 8P, Tapping screw
A12	27120393	Back panel (D)
	27120394	Back panel (G)
	27120395	Back panel (W)
A13	834130068	3TTS + 6B, Tap screw
A14	838126088	2.6TTB + 8B, Tap screw
A15	833130080	3TTP + 8P, Tap screw
A16	27130247-1A	Bracket, power transformer
A17	833140087	4TTP + 8S, Tap screw
A18	834130068	3TTS + 6B, Tap screw
A19	27140478	Bracket, power
A20	834130068	3TTS + 6B, Tap screw
A21	82113006	3P + 6FN, Pan head screw
A22	27260069	Shaft, power switch
A23	28320135	Connector
A24	27273016	Joint
A25	28140430	Cushion
A26	28140291	Cushion
A27	270025	SR-3P4, Strainrelief (D)
A28	270280	SR-4K-4, Strainrelief (G/W)
A29	28140020	Cushion
A30	223004-1	Terminal

REF. NO.	PARTS NO.	DESCRIPTION
A30	223004-1	Terminal
A31	28130132	Dial plate
A32	24610643	Tape mirror
A34	24610631-1	Holder, left side
A35	24610632-1	Holder, right side
A36	27300445-1	Case, cassette White
A37	838126088	2.6TTB + 8B, Tap screw
A38	27180102	Spring
A39	27300446	Lever
A40	27180101-1	Spring
A41	28140059	Cushion
A42	24602128	Belt, counter
A45	838126088	2.6TTB + 8B, Tap screw
A48	82542610	2.6B + 10FN (BC), Screw
A49	863126	N-2.6FN (BN), Nut
A51	82112604	2.6P + 4F, Pan head screw
A54	8771301010	W3x10F, Washer
A59	29110029	Adhesive tape
A351	28184126A	Top cover
A352	834430068	3TTS + 6B (BC), Tap screw
A353	834130068	3TTS + 6B, Tap screw
A501	16158121	Front panel ass'y
A502	834130088	3TTS + 8B, Tap screw
A503	833130080	3TTP + 8P, Tapping screw
A507	28191141	Clear plate
A512	28400088	Window
A513	28400087	Lid
A514	27190165	Holder, pc
A522	260701	Adhesive tape
A523	29110029	Adhesive tape

EXPLODED VIEW



REF. NO.	PARTS NO.	DESCRIPTION
A631	2717032	Bottom board
A632	831130068	3TTW + 6B, Tap screw
A633	831130088	3TTW + 8B, Tap screw
A634	27175028	Leg
A635	870087	Washer
A636	838130068	3TTP + 6B, Tap screw
A801	28320671	Knob, input level, left side
A802	28320672	Knob, input level, right side
A803	28320683	Knob, REV/FWD
A804	16389704	Knob, pause
A805	16389705	Knob, stop/play
A806	28320681A	Knob, FF/Rew
A807	16389706	Knob, Rec/Auto space
A811	28320573	Knob, push
A812	28320760	Knob, selector
A813	28320678	Knob, eject
A814	28320796	Knob, switch
A815	28320797	Knob, accu
C951	3500065A	0.01μF, AC400V, Capacitor, IS
	27300080	Cover, Capacitor
D551	225099	TLM8102, L.E.D, meter
P531	25050071	NSAS-12P038, Socket, meter
P135, R136	5104133	N16RK50KA25F, Variable resistor, input level
S901	25035224	NPS-121-L188P, Power switch (D)
	25035192	NPS-122-L156P, Power switch (G)
	25035207	NPS-121-L171P, Power switch (W)
T901	230612	NPT-782D, Power transformer (D)
	230613	NPT-782G, Power transformer (G)
	230614	NPT-782DG, Power transformer (W)
W901	253099A	AS-UC-3, Power supply cable (D)
	253083	AS-CEE, Power supply cable (G/W)

REF. NO.	PARTS NO.	DESCRIPTION
U1	16158505	NAAF-1405, Rec/pb amplifier and control pc board ass'y (D)
	16158505A	NAAF-1405A, Rec/pb amplifier and control pc board ass'y (G/W)
U2	16158506	NADIS-1406, tape selector indicator L.E.D pc board ass'y
U3	16158509	NASW-1409, Control switch pc board ass'y
U4	16158508	NASW-1408, Timer switch pc board ass'y
U5	16158507	NAPD-1407, Hall IC pc board ass'y
U6	16158511	NARM-1411, Remote control terminal pc board ass'y
U7	16158510	NAVR-1410, Accu control pc board ass'y
U8	16158504A	NADOL-1404A, Dolby circuit pc board ass'y
Z1	244035	Tape deck mechanism
Z2	24603234	Lever, eject
Z5	24610508	Damper
Z12	27180109	Spring
Z14	27180114-1	Spring
Z16	834126068	2.6TTS + 6B, Tap screw
	25065123	NSS-1258P, Voltage selector (W)

Note: (D) : Only 120V model
(G) : Only 220V model
(W) : Only 120/220V model

ADJUSTMENT PROCEDURES

PRECAUTIONS

1. Before adjustment, clean the following parts with an alcohol moinstend swab.
   * record/playback head
   * erase head
   * pinch roller
   * capstan
   * rubber belt
2. Do not use magnitized screwdriver for adjustments.
3. Demagnetize record/playback head with a head demagnetizer.
4. The switches and controls should be set as follows unless otherwise specified.
   TAPE SEL . . . . . NORM
   DOLBY NR . . . . . OUT
   INPUT LEVEL 0
   TIMER . . . . . OFF

TEST EQUIPMENT/TOOLS REQUIRED:

Audio oscillator
Digital frequency counter
Oscilloscope
Attenuator
AC voltmeter
Non-magnetic screw drive
Blank tapes (completely erased)
NORMAL . . . . . UD-XL/I
HIGH . . . . . UD-XL/II
METAL . . . . . MX
Test tapes
VTT-658 : 10 kHz, – 15 dB
MTT-111 : 3 kHz,
MTT-150 : Dolby level calibration 400 Hz tone 200 nWb/m
TW-2111 : Torque meter

1. Play torque adjustment

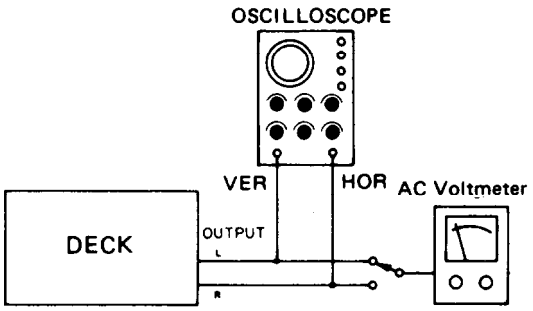
Play the torque meter TW-2111 back.
Adjust the R708 so that torque of take-up reel becomes 40 gr-cm.

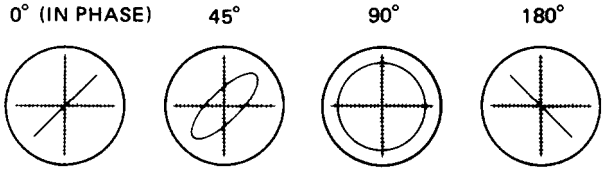
2. Tape speed adjustment

Connect the frequency counter to the line output terminal.
Play the MTT-111 back.
Adjust the semi-fixed resistor on the motor control pc board so that the counter indication becomes 3,000 Hz.

3. Head azimuth adjustment

1) Play the test tape VTT-658 back.
2) Adjust the head azimuth screw so that the phase relationship between L-and R-channels approximates 0 degrees as indicated on the oscilloscope.
3) At this time confirm that play back output level is approximately the maximum value on the AC voltmeter.
4) Then confirm that the phase difference of the respective frequency is with in the rated value 90 degreees or less in the range of 40 Hz to 10 kHz is required.
5) Secure the screw with the locking paint.

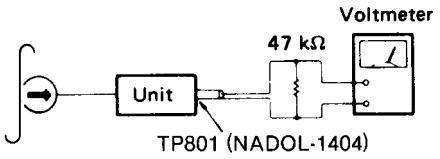




Confirming phase relationship

4. Playback output level adjustment

Connect the AC voltmeter to the TP801 terminals.
Play the MTT-150 back.
Adjust the R131 and R132 so that the indication of AC voltmeter becomes 580mV.



5. Level meter adjustment

Play the MTT-150 back.
Adjust the R412 so that the 0dB of level meter light on.

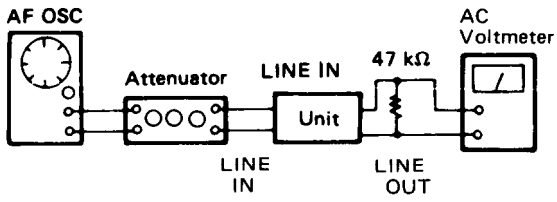
6. Bias current adjustment

Insert the normal blank tape into the cassette holder. Apply the 400Hz signal to the line input terminal. Press the rec and pause button together and set the tape deck to the recording mode. Adjust the input level volume or AF oscillator so that the 0dB of level meter light on. Reduce the input level by 20dB with the attenuator. Record the 400Hz and 10kHz signals on the tape. Adjust the R333 and R334 so that the 400Hz and 10kHz playback signal become the same level.

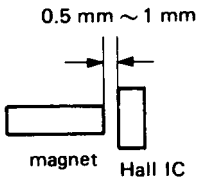
7. Recording level adjustment

Apply the 700Hz signal to the the line input terminal. Insert the normal blank tape into the cassette holder. Connect the AC voltmeter to the line output terminal. Set the tape deck to the recording mode. Adjust the input volume or AF oscillator output so that the 0dB of level meter light on. Reduce the input level by 3dB. Record the 700Hz signal on the tape and adjust the R301 and R302 so that the level of recording and playback become same.

Connection diagram

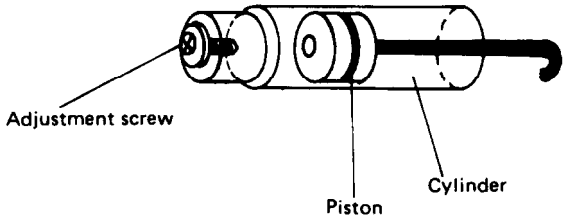


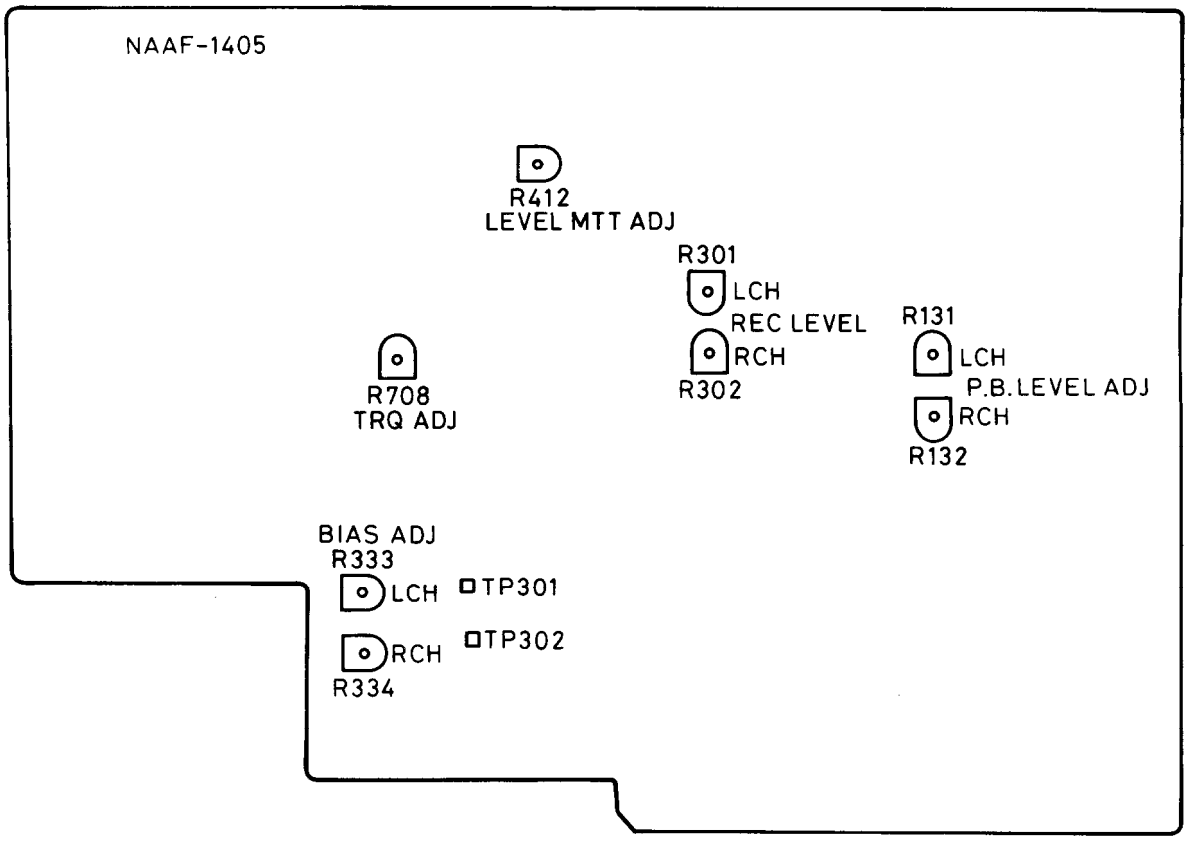
8. Hall IC clearance



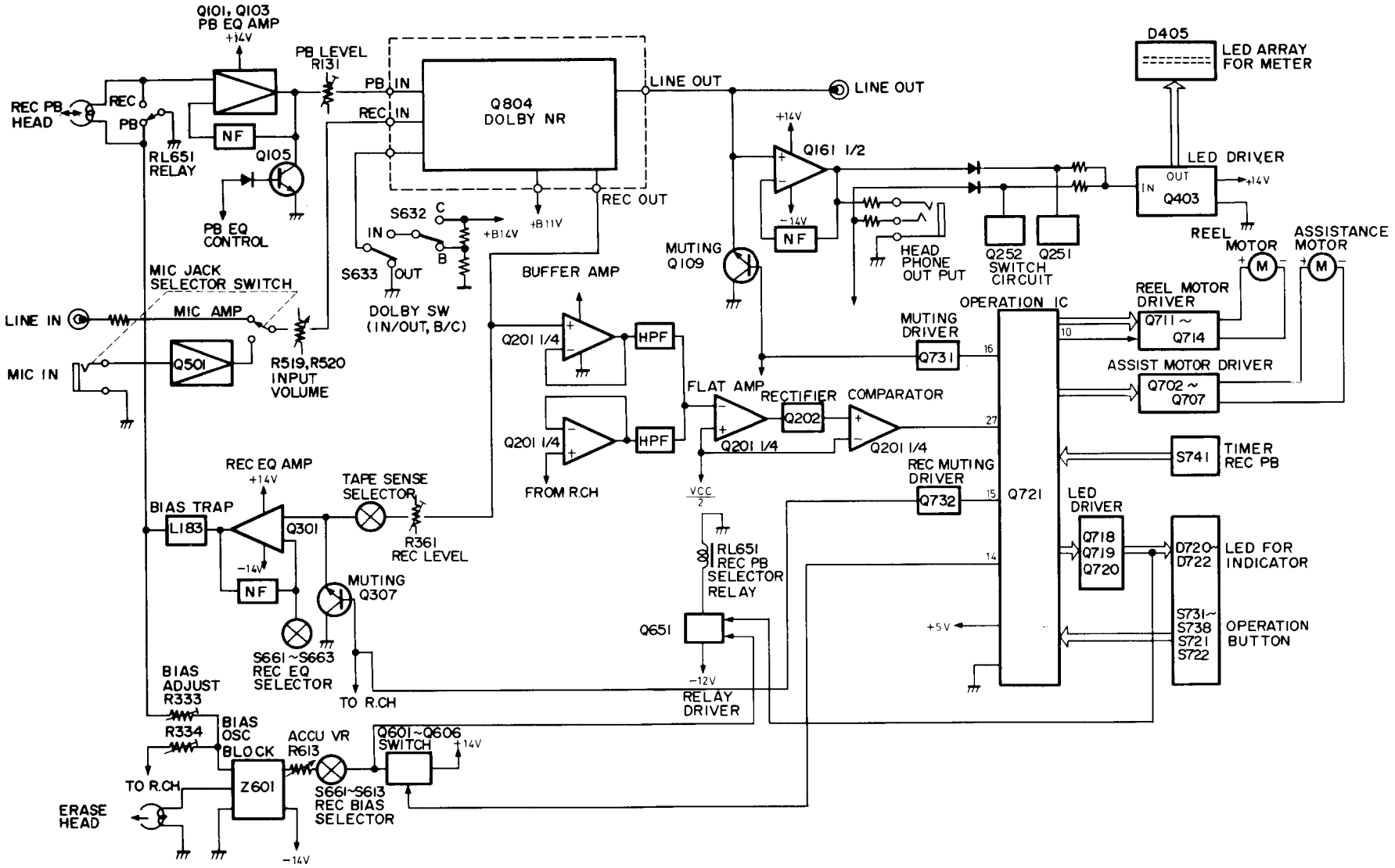
9. Adjustment of the eject mechanism

The speed of the opening and closing action of the cassette compartment can be controlled by the adjustment screw at the rear of the cylinder as shown in the graph. By turning the screw to the left, speed becomes faster, and to the right, and to the right, slower.





BLOCK DIAGRAM



PRINTED CIRCUIT BOARD-PARTS LIST

REC./PLAYBACK AMPLIFIER AND CONTROL PC BOARD (NAAF-1405)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	ICs	
Q161	222654	NJM4556D, Headphone amplifier
Q201	222604	LM324N, AMSS
Q301	222465	NJM4558D, Recording amplifier
Q403	222507	TA-7612P, Meter drive
Q721	222637	TMP4315AP-1011, Micro computer
	Transistors	
Q101-Q104	2211896 or	2SC1675L (L) or
	2212256	2SC2458L (L)
Q105-Q107	2211255,	2SC1815 (GR),
Q109, Q110	2212115,	2SC2458 (GR),
Q303-Q314	2210746 or	2SC945A (P) or
Q401, Q402	2212155	KTN5014 (GR)
Q111	2211544	2SC1959 (Y)
Q202	2211454 or	2SA1015 (Y) or
	2212124	2SA1048 (Y)
Q501, Q502	2211896 or	2SC1815L (L) or
	2212256	2SC2458L (L)
Q503, Q504	2211945	2SK246 (GR), F.E.T (G/W)
Q601	2211554	2SA562TM (Y)
Q602-Q605	2211255,	2SC1815 (GR),
Q631-Q633	2212115,	2SC2458 (GR),
Q651	2210746 or	2SC945A (P) or
Q661-Q663	2212155	KTN5014 (GR)
Q606	2201285 or	2SD882 (Q) or
	2201286	2SD882 (P)
Q701	2211611 or	2SD471 (K) or
	2211612	2SD471K (L)
Q702, Q703	2211554	2SA562 (TM) (Y)
Q704, Q705	2211253	2SC1815 (O)
Q706, Q707	2211544	2SC1959 (Y)
Q708, Q710	2211255,	2SC1815 (GR),
Q733, Q734	2212115,	2SC2458 (GR),
	2210746 or	2SC945A (P) or
	2212155	KTN5014 (GR)
Q709	2201060	2SD549
Q711, Q712	2211554	2SA562TM (Y)
Q713, Q714	2211706	2SD655 (F)
Q731, Q732	2211454 or	2SA1015 (Y) or
	2212124	2SA1048 (Y)
Q735-Q737	2211454 or	2SA1015 (Y) or
	2212124	2SA1048 (GR)
Q901, Q902	2201074	2SD880 (Y)
Q903, Q904	2201275	2SB772 (Q)
	Diodes	
D101, D102	223133 or	DS442X or
	223105 or	1S1555
D161, D162	223132	1K60
D201	223133 or	DS442X or
D401-D404	223105	1S1555
D407-D410	223133 or	DS442X or
D601, D602	223105	1S1555
D501, D502	223133 or	DS442X or
	223105	1S1555 (G/W)
D604	224133	05Z2.0Z
D661, D662	223133 or	DS442X or
D641, D642	223105	1S155
D651	2239511 or	RD6.8EB1 or
	2239512	RD6.8EB2
D652	223133 or	DS442X or
	223105	1S1555
D653	223132	1K60
D901	223868	2W02
D902	223804 or	SR1K-2 or
	223848	GP08B
D903, D904	2239672	RD16EB2
D905	2239491	RD6.2EB1
D906	2239652	RD13EB2
D701	2239571 or	RD9.1EB1 or
	2241033	GZA8.2Z
D702	223133 or	DS442X or
	223105	1S1555
D711-D716	223132	1K60
D717	223133 or	DS442X or
	223105	1S1555
D718	223132	1K60
	Coils	
L301-L304	24606069	NCH-1007, 3.9mH
L305, L306	233247	NCH-4054
	Transformer	
L701	232100	NMIF-6030
	Oscillator block	
Z601	24606115	NOB-016
	Capacitors	
C103, C104	392880337	3.3μF, 50V, LL
C110	352741019	100μF, 16V, Elect.
C111, C112	352741009	10μF, 16V, Elect.
C113, C114	352732209	22μF, 10V, Elect.
C119, C120	352741009	10μF, 16V, Elect.
C121	352741019	100μF, 16V, Elect.
C122	352744709	47μF, 16V, Elect.
C161, C162	352741009	10μF, 16V, Elect.
Q203	352741009	10μF, 16V, Elect.
C204, C205	352780109	1μF, 50V, Elect.
C303, C304	352782299	0.22μF, 50V, Elect.
C311, C312	352750479	4.7μF, 25V, Elect.
C401, C402	352780339	3.3μF, 50V, Elect.
C404	352780229	2.2μF, 50V, Elect.
C503-C506	352780109	1μF, 50V, Elect.
C507	352732219	220μF, 10V, Elect.
C508	352741019	100μF, 16V, Elect.
C601	352722219	220μF, 6.3V, Elect.
C602, C603	352744719	470μF, 16V, Elect.
C632	352742209	22μF, 16V, Elect.
C651	352780109	1μF, 50V, Elect.
C652	352780479	0.47μF, 50V, Elect.
C702	352741009	10μF, 16V, Elect.
C704, C731	352780109	1μF, 50V, Elect.
C732, C733	352780109	1μF, 50V, Elect.
C901	352753329	3,300μF, 25V, Elect.
C902	352744719	470μF, 16V, Elect.
C903	352751029	1,000μF, 25V, Elect.
C904, C905	352741019	100μF, 16V, Elect.
C906	3504168	13,000μF, 25V, Elect.
C907, C908	352724709	47μF, 6.3V, Elect.
C909	352741019	100μF, 16V, Elect.
	Resistors	
R131, R132	5215046	N08HR50KBC, Playback level adjustment semi-fixed
R301, R302	5215044	N08HR5KBC, Recording level adjustment simi-fixed
R333, R334	5215047	N08HR100KB, Bias current adjustment semi-fixed
R412	5215045	N08HR10KBC, Level meter adjustment semi-fixed
R708	5215042	N08HR1KBC, Playback torque adjustment semi-fixed
R711	441723904	39Ω, 2W, Metal oxide film
R731-R740	49121392410	3.9kΩx10, 1/8W, Network
R741-R750	49121562410	5.6kΩx10, 1/8W, Network

CIRCUIT NO.	PARTS NO.	DESCRIPTION
R765-R769	49121223405	22kΩx5, 1/8W, Network
R901	441520684	6.8Ω, 1/2W, Metal oxide film
R902, R904	441520104	1Ω, 1/2W, Metal oxide film
R905	441521004	10Ω, 1/2W, Metal oxide film
R906	441528214	820Ω, 1/2W, Metal oxide film
R907	441521014	100Ω, 1/2W, Metal oxide film
R908	441520684	6.8Ω, 1/2W, Metal oxide film
	Switches	
S631-S634	25025328	NPS-422-L292, Dolby, Filter, Auto/Manual
S721, S722	25035286	NPS-111-L252, AMSS
	Plugs	
P101	25055037	NPLG-6P28
P102	25055038	NPLG-2P29
P109	25055066	NPLG-7P52
P110	25055046	NPLG-10P34
P111	25055066	NPLG-7P52
P112	25055046	NPLG-10P34
P401	25065133	NPLG-12P18
P661	25055045	NPLG-4P33
P701	25055052	NPLG-11P40
	Terminals	
P103, P104	25045111	HLJ4305-01-010, Microphone
P105	25045110	HLJ4305-01-020, Stereo headphone
P106	25050064	NSCT-5P18, DIN (G/W)
P107	25045084	NPJ-4PDBL42, Tape input/output
	Relay	
RL651	25065174	NRL-2P-1A-DC12-09

Note: G/W : Only G/W models

TAPE SELECTOR INDICATOR PC BOARD (NADIS-1406)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D631-D632	225084	SLP-153B, L.E.D.
D633, D635	225085	SLP-253B, L.E.D.
D636	225119	SLP-453B, L.E.D.

AUTO-STOP DETECTOR PC BOARD (NATD-1047)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q741	222558	DN6838

TIMER/CONTROL SWITCH PC BOARD (NASW-1408/1409)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
S741, S742	25065170	NSS-2377, Timer switch
S731-S738	25035275	NPS-111-S239, Tape control switch
D720, D722	225059	SEL1110S, L.E.D.
D721	225060	SEL1310E, L.E.D.
	27190086	Holder

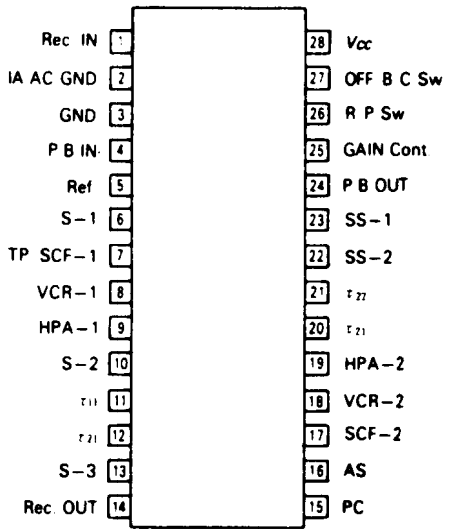
ACCU. CONTROL PC BOARD (NAVR-1410)

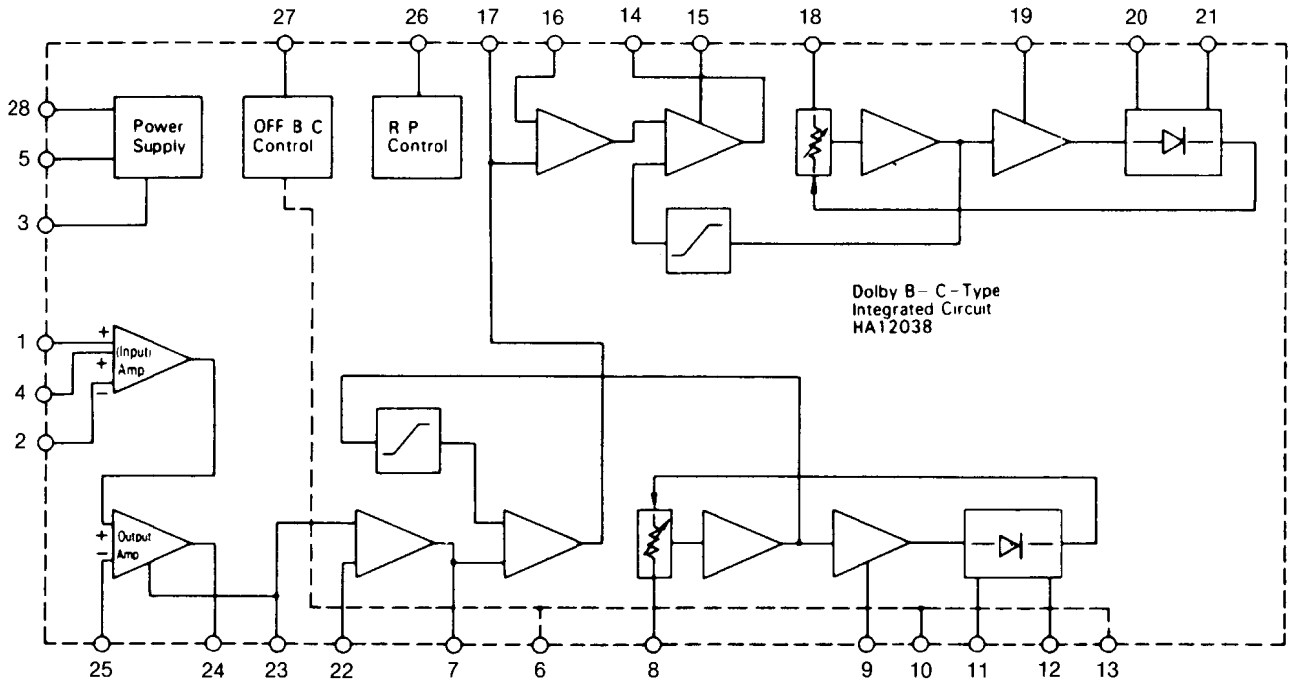
CIRCUIT NO.	PARTS NO.	DESCRIPTION
R613	5146035	N16RLC500B20, Accu. level control variable resistor

REMOTE CONTROL TERMINAL PC BOARD (NARM-1411)

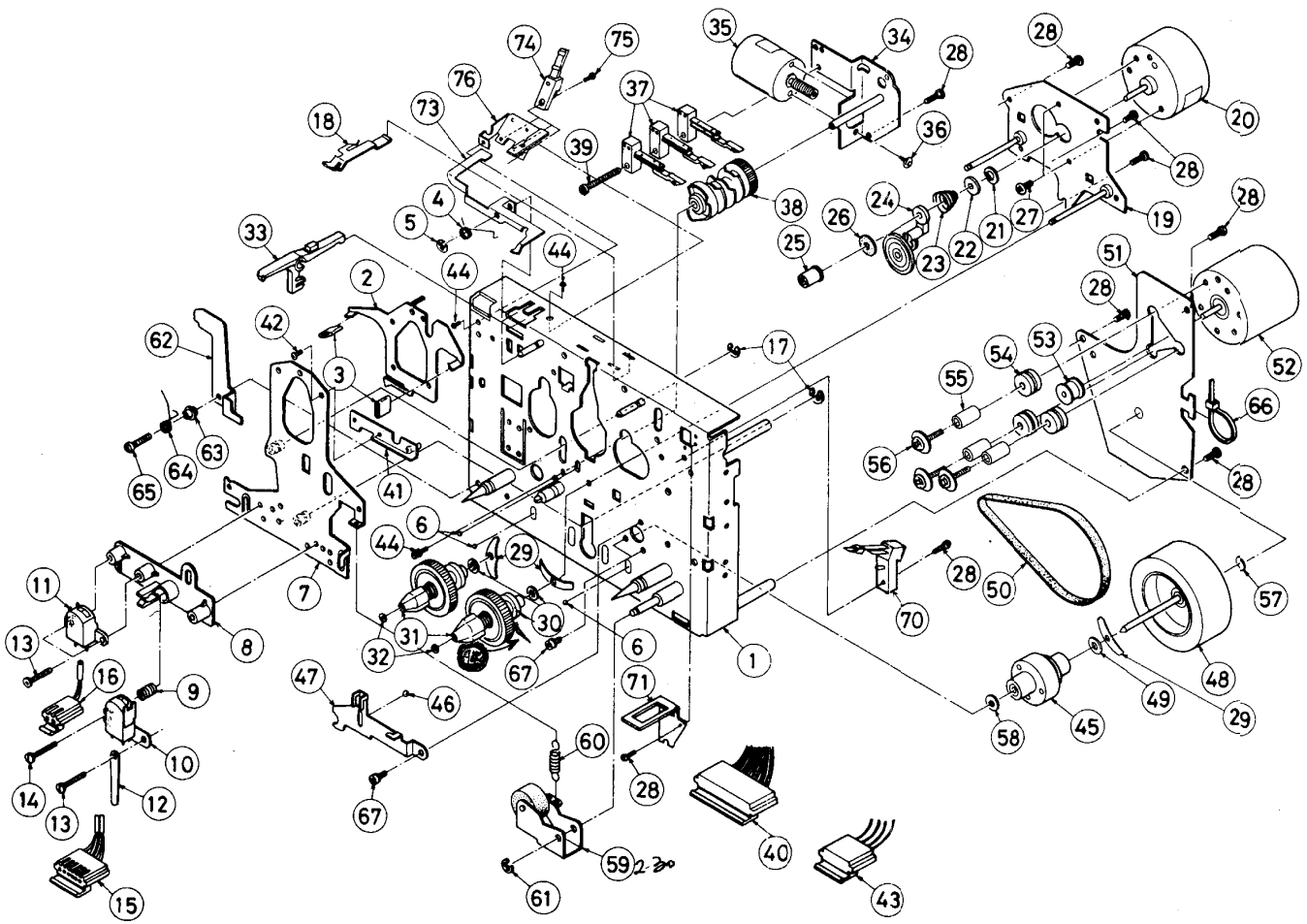
CIRCUIT NO.	PARTS NO.	DESCRIPTION
P702	25050070	NSCT-7P20, DIN terminal

BLOCK DIAGRAM OF IC
HA-12038 (DOLBY B&C TYPE NOISE REDUCTION SYSTEM)





TAPE MECHANISM EXPLODED VIEW



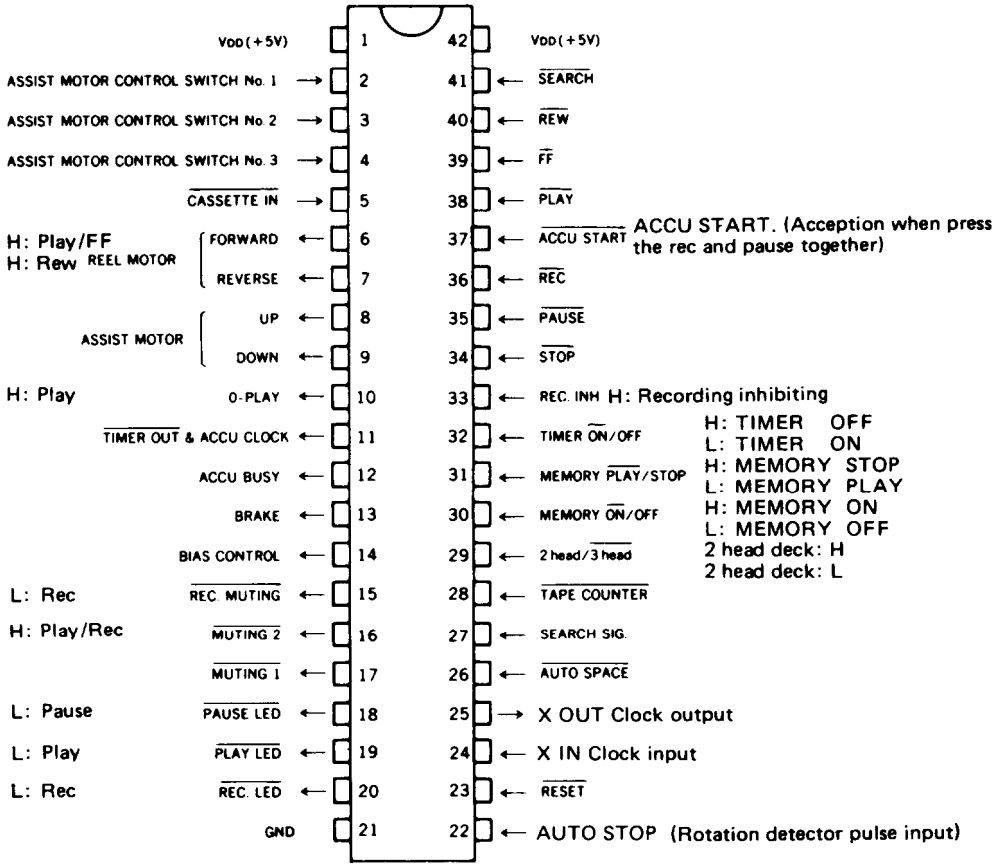
REF. NO.	PARTS NO.	DESCRIPTION
1	24610815	Mechanism chassis
2	24610664	Brake plate
3	24610376	Rubber, brake
4	24605379	Spring
5	8930251	E2.5, Circlip
6	24610351	2φ, steelball
7	24610805	Head chassis
8	24610346	Head stand
9	24605185	Spring
10	24600018	Rec/playback head
11	24600025	Erase head 9.50
12	24610666	Holder, lead wire
13	82512012	M2x13, Binding screw
14	801198	M2x14, Flange screw
15	25050115	Connector, rec/pb head
16	25050136	Connector, erase head
17	8930302	E3, Circlip
18	24605380	Cassette holding spring
19	24610667	Motor chassis
20		Reel motor (See No. 68)

REF. NO.	PARTS NO.	DESCRIPTION
21	24610373	Stand, spring
22	24610374	Washer
23	24605194	Spring
24	24602076	Idler lever ass'y
25	24601102	Motor pulley
26	24610375	Felt
27	82512603	M2.6x3, Binding screw
28	833125059	Pan head screw
29	24605303	Back tension spring
30	24610992	Washer

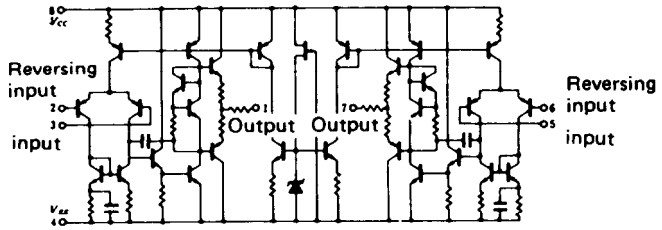
REF. NO.	PARTS NO.	DESCRIPTION
31	24602136	Reel stand 3.20
32	24610349	Washer
33	24603205	Recording lever
34	24610668	Chassis
35	24601103	Motor, assistance
36	801259	M2x3, Screw
37	24606119	Leafswitch
38	24602133	Cam gear
39	833125209	M2.5x20, Pan head screw
40	25050137	Connector, 11P
41	24610806	Joint plate
42	801266	M2.6x3.5 Pan head screw
43	25050138	Connector 4p
44	801250	M2x4, Pan head screw
45	24610816	Capstan holder
46	24610279	3φ, steelball
47	24610669	Head holding plate
48	24602135	Flywheel
49	24610515	Washer
50	24602134	Belt 1.00
51	24610670	Flywheel holding plate
52		Capstan motor ass'y (See No. 69)
53	24601107	Motor pulley
54	24610451	Cushion
55	24610807	Spacer
56	801261	Screw, motor
57	24610671	Thrust stand
58	24610673	Plain washer
59	24610672	Pinch arm ass'y 2.30
60	24605370	Spring
61	8930201	E2, Circlip
62	24610345	Locked plate
63	24610344	Collar
64	24605184	Spring
65	833125109	M2.5x10, Pan head screw
66	260208	Binder
67	801181	M2.6x6, Pan head screw
68	24601117	Reel motor/idler ass'y (20-26)
69	24601113	Capstan motor ass'y (52, 53)
70	24606104	Leafswitch
71	24610659	Protection plate
73	24603236	Lever
74	24603128	Leafswitch
75	82112004	M2x4, Pan head screw
76	24610814	Switch chassis

BLOCK DIAGRAM OF IC

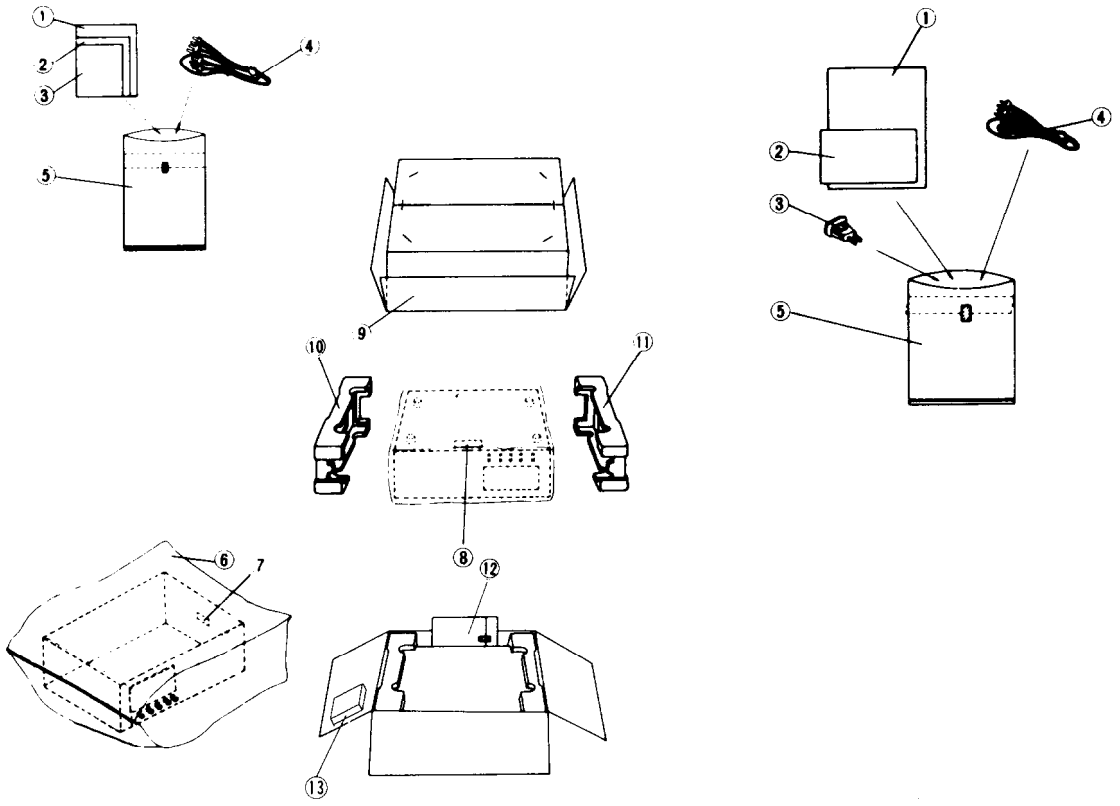
TMP4315AP-1011


VDD (+5V) 1
ASSIST MOTOR CONTROL SWITCH No. 1 → 2
ASSIST MOTOR CONTROL SWITCH No. 2 → 3
ASSIST MOTOR CONTROL SWITCH No. 3 → 4
CASSETTE IN → 5
H: Play/FF
H: Rew REEL MOTOR
FORWARD ← 6
REVERSE ← 7
ASSIST MOTOR
UP ← 8
DOWN ← 9
H: Play
0-PLAY ← 10
TIMER OUT & ACCU CLOCK ← 11
ACCU BUSY ← 12
BRAKE ← 13
BIAS CONTROL ← 14
L: Rec
REC. MUTING ← 15
H: Play/Rec
MUTING 2 ← 16
MUTING 1 ← 17
L: Pause
PAUSE LED ← 18
L: Play
PLAY LED ← 19
L: Rec
REC. LED ← 20
GND 21
42 VDD (+5V)
41 ← SEARCH
40 ← REW
39 ← FF
38 ← PLAY
37 ← ACCU START ACCU START. (Acception when press the rec and pause together)
36 ← REC
35 ← PAUSE
34 ← STOP
33 ← REC. INH H: Recording inhibiting
32 ← TIMER ON/OFF H: TIMER OFF L: TIMER ON
31 ← MEMORY PLAY/STOP H: MEMORY STOP L: MEMORY PLAY
30 ← MEMORY ON/OFF H: MEMORY ON L: MEMORY OFF
29 ← 2 head/3 head 2 head deck: H 2 head deck: L
28 ← TAPE COUNTER
27 ← SEARCH SIG.
26 ← AUTO SPACE
25 → X OUT Clock output
24 ← X IN Clock input
23 ← RESET
22 ← AUTO STOP (Rotation detector pulse input)

NJM4556/4558 (Operational amplifier)



PACKING PROCEDURES



120V model

REF. NO.	PARTS NO.	DESCRIPTION
1	29340609	Instruction manual
2	29358002	Service station list (D)
3	29365006-3	Warranty card (D)
4	253074	Pin-pin connection cord
5	29100005	330 x 220mm, Poly bag
6	29100037	650 x 500mm, Poly bag
7	29360567	Caution label (D)
8	29360566	Caution label (D)
9	29050559	Carton box
10	29090647	Pad (R)
11	29090646-1	Pad (L)
12		Accessary bag complete
13	29090675	Pad (C)

(D) : Only U.S.A. model

G/W model

REF. NO.	PARTS NO.	DESCRIPTION
1	29340610	Instruction manual
2	29365005-3	Warranty card (G)
3	25055040	Conversion plug (W)
4	253074	Pin-pin connection cord
5	29100005	330 x 220mm, Poly bag
6	29100037	650 x 500mm, Poly bag
9	29050559	Carton box
10	29090647	Pad (R)
11	29090646-1	Pad (L)
12		Accessary bag complete
13	29090675	Pad (C)

(G) : Only West Germany
(W) : Only 120/220V model

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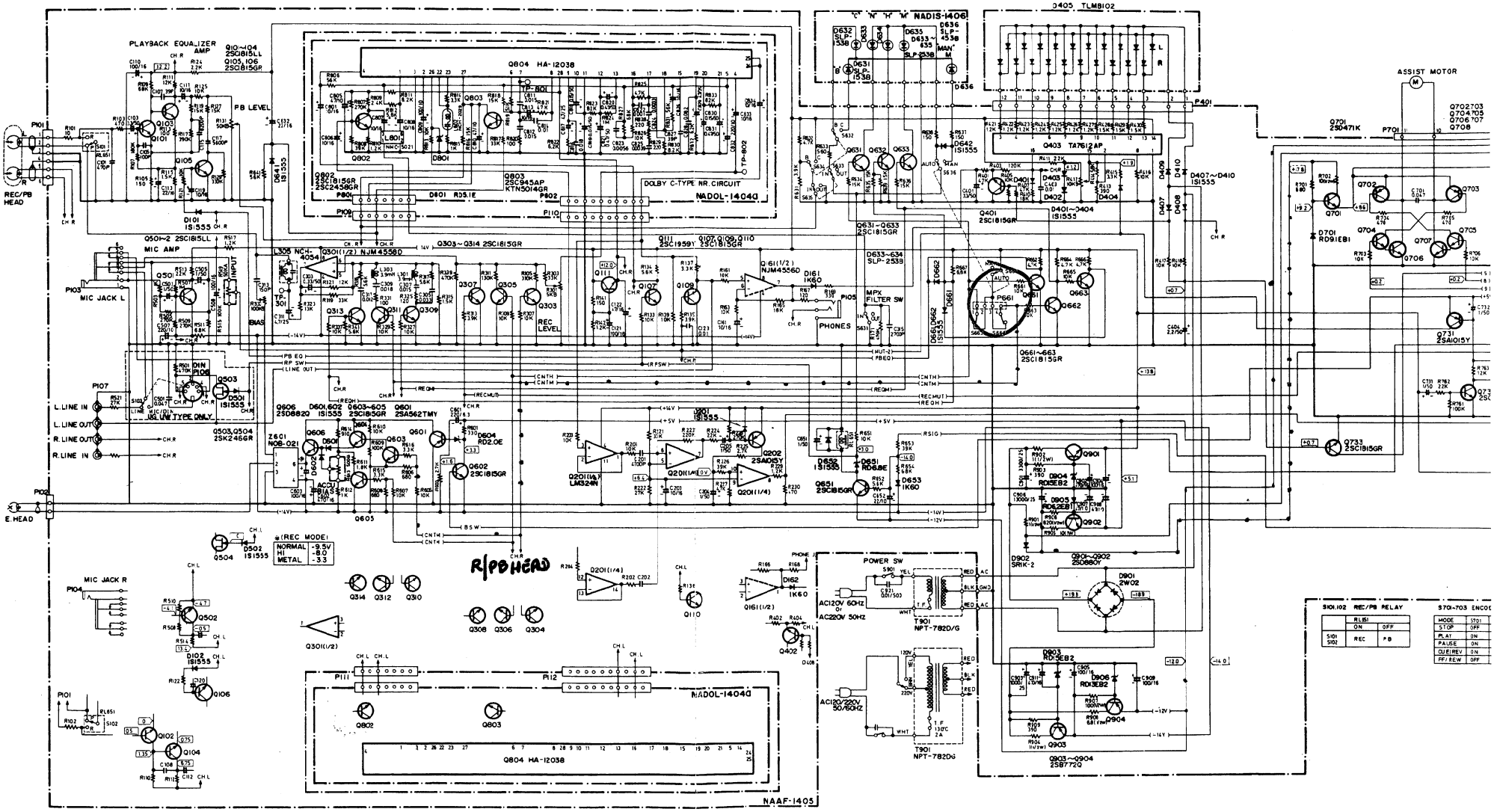
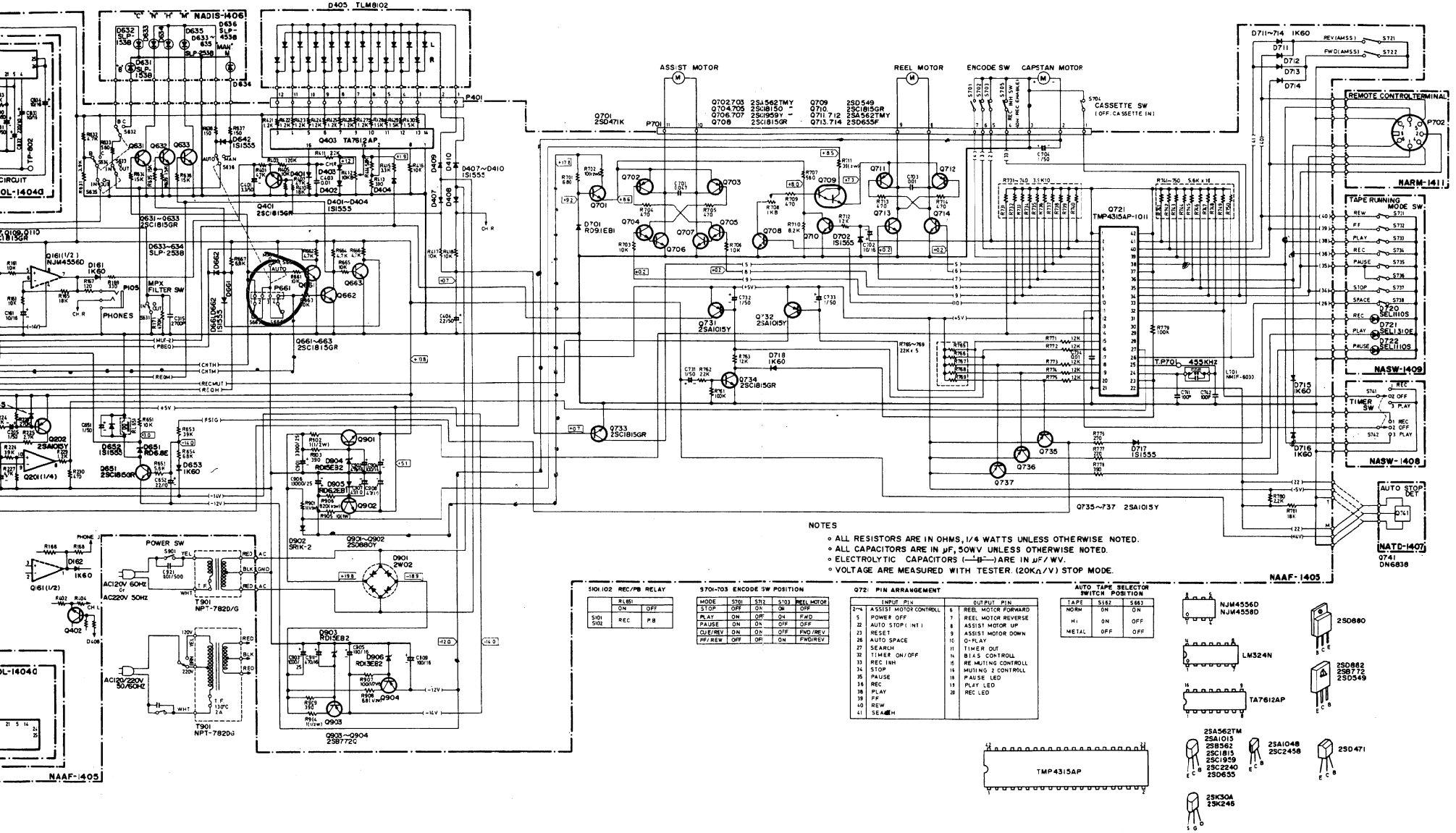
Printed in Japan E206

SCHEMATIC DIAGRAM
G/W model





S101 102	REC/PB RELAY	
	ON	OFF
S101 S102	REC	PB

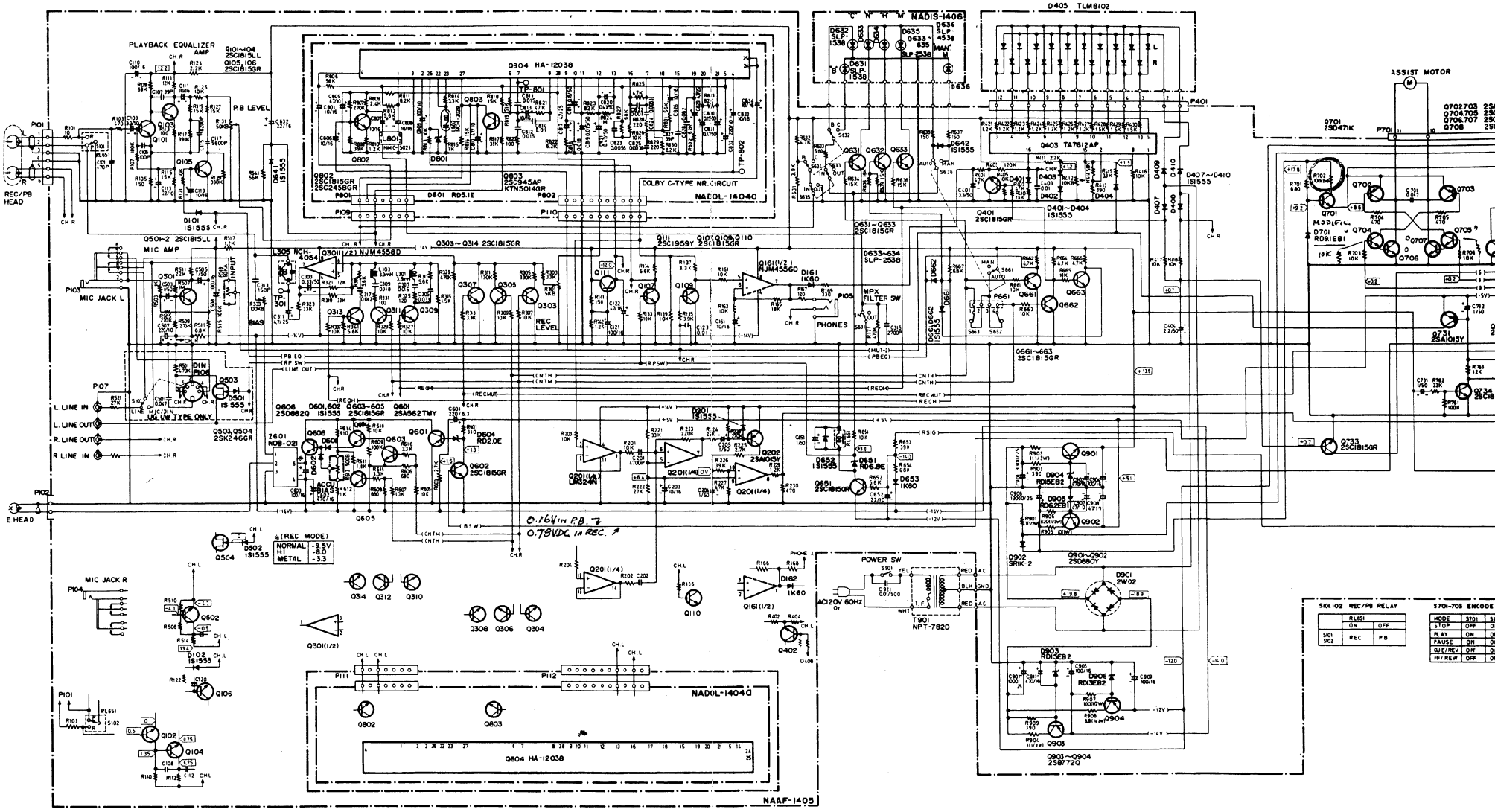
	S701	S702	S703	REEL MOTOR
STOP	OFF	ON	ON	OFF
PLAY	ON	OFF	ON	FWD
PAUSE	ON	ON	OFF	OFF
CUE/REV	ON	ON	OFF	FWD/REV
FF/REW	OFF	OFF	ON	FWD/REV

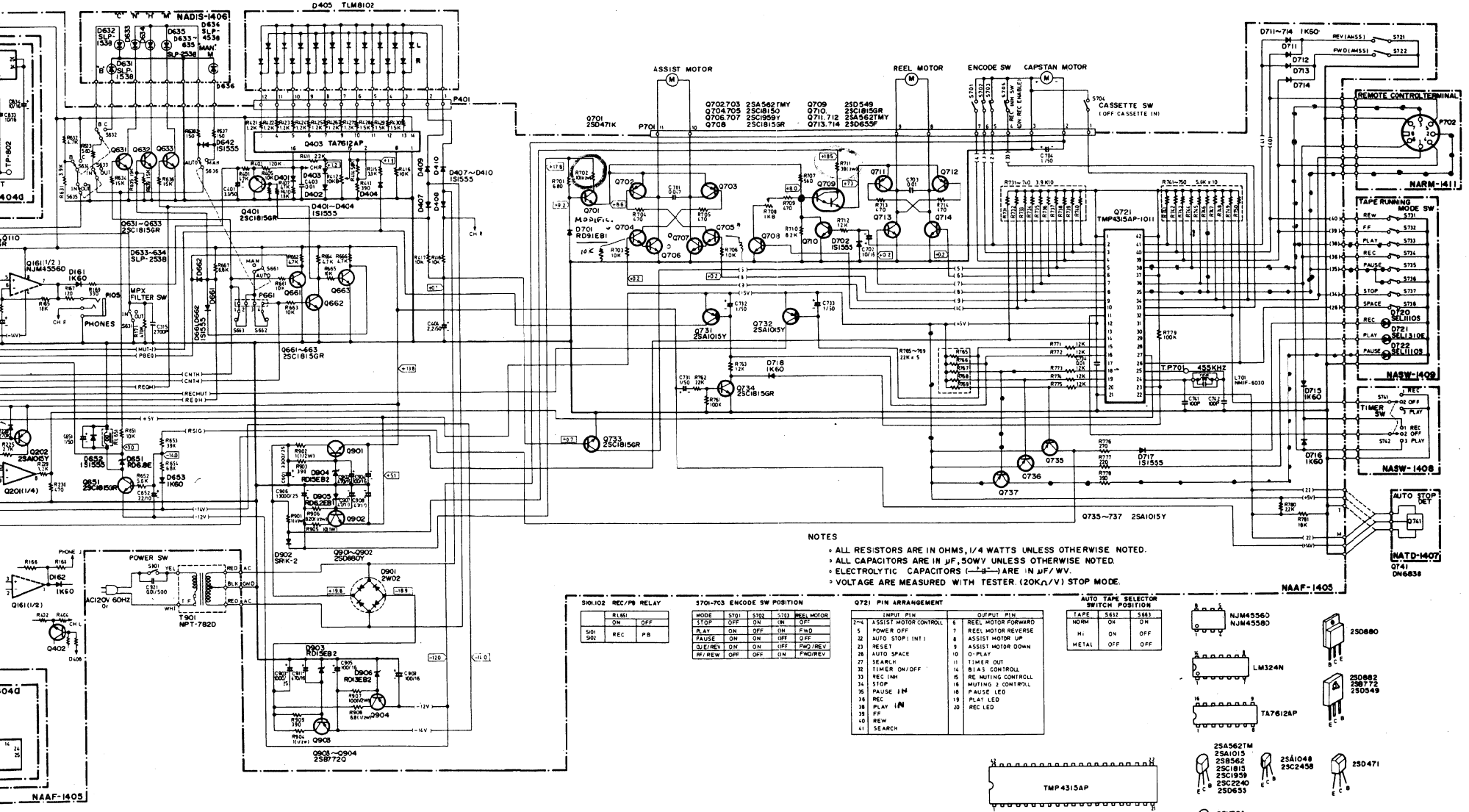
	INPUT PIN		OUTPUT PIN
2~4	ASSIST MOTOR CONTROLL	6	REEL MOTOR FORWARD
5	POWER OFF	7	REEL MOTOR REVERSE
22	AUTO STOP (INT)	8	ASSIST MOTOR UP
23	RESET	9	ASSIST MOTOR DOWN
26	AUTO SPACE	10	Q-PLAY
27	SEARCH	11	TIMER OUT
32	TIMER ON/OFF	14	BIAS CONTROLL
33	REC INH	15	RE MUTING CONTROLL
34	STOP	16	MUTING 2 CONTROLL
35	PAUSE	18	PAUSE LED
36	REC	19	PLAY LED
38	PLAY	20	REC LED
39	FF		
40	REW		
41	SEARCH		

AUTO TAPE SELECTOR SWITCH POSITION		
TAPE	S552	S663
NORM	ON	ON
HI	ON	OFF
METAL	OFF	OFF

ONKYO CORPORATION

SCHEMATIC DIAGRAM
D model





NOTES

- ALL RESISTORS ARE IN OHMS, 1/4 WATTS UNLESS NOTED.
- ALL CAPACITORS ARE IN μF, 50WV UNLESS NOTED.
- ELECTROLYTIC CAPACITORS (—|(—) ARE IN μF/WV.
- VOLTAGE ARE MEASURED WITH TESTER. (20KΩ/V) STOP MODE.

S101.102 REC/PB RELAY

	R1651	
	ON	OFF
S101 S102	REC	PB

S701-703 ENCODE SW POSITION

MODE	S701	S702	S703	REEL MOTOR
STOP	OFF	ON	ON	OFF
PLAY	ON	OFF	ON	FWD
PAUSE	ON	ON	OFF	OFF
CUE/REV	ON	ON	OFF	FWD/REV
RF/REW	OFF	OFF	ON	FWD/REV

Q721 PIN ARRANGEMENT

INPUT PIN		OUTPUT PIN	
2~4	ASSIST MOTOR CONTROLL	6	REEL MOTOR FORWARD
5	POWER OFF	7	REEL MOTOR REVERSE
22	AUTO STOP (INT)	8	ASSIST MOTOR UP
23	RESET	9	ASSIST MOTOR DOWN
26	AUTO SPACE	10	O-PLAY
27	SEARCH	11	TIMER OUT
32	TIMER ON/OFF	14	BIAS CONTROLL
33	REC INH	15	RE MUTING CONTROLL
34	STOP	16	MUTING 2 CONTROLL
35	PAUSE IN	18	PAUSE LED
36	REC	19	PLAY LED
38	PLAY IN	20	REC LED
39	FF		
40	REW		
41	SEARCH		

AUTO TAPE SELECTOR SWITCH POSITION

TAPE	S662	S663
NORM	ON	ON
HI	ON	OFF
METAL	OFF	OFF

NJM45560
NJM45580
LM324N
TA7612AP
2SD880
2SD882 2SB772 2SD549
2SA562TM 2SA1015 2SB562 2SC1815 2SC1959 2SC2240 2SD633
2SA1048 2SC2458
2SD471
2SK30A 2SK246

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